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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,094	09/21/2001	Masatsugu Nishida	0941.65858	5078

7590 10/07/2003

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EXAMINER

PSITOS, ARISTOTELIS M

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 10/07/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,094

Applicant(s)

NISHIDA ET AL.

Examiner

Aristotelis M Psitos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) all is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 6/15/01. It is noted, however, that applicant has not filed a certified copy of the Japanese application as required by 35 U.S.C. 119(b). Although paper #4 indicates that such a copy was submitted, no copy thereof is associated with this file. Absent any documentation that the certified copy was indeed submitted, the certified copy is required.

Information Disclosure Statement

The IDS of 12/7/01 has been made of record.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

3. Claims 5 and 13 are objected to because of the following informalities: Claims 5 and 13 recite the same limitation with respect to "off time information". However, this is not clearly understood. The examiner interprets such claim as an attempt to define the "storage"/memory (table) which stores such information. Appropriate correction is required.

As far as the claims recite positive limitations, the following rejections are made.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7, 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishida et al.

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Applicants' attention is drawn to the abstract as well as to figures 1 and 11 and the associated disclosure thereof. As indicated therein, the current detection, the comparison, control section and the "off time control" section are depicted.

With respect to claims 2,3 and 4, applicants' attention is further drawn to the description of figure 5.

With respect to claims 5,6 and 7 applicants' attention is drawn to the discussion with respect to figures 14 and 15 starting at col. 10 (the table is incorporated within element 304).

The method limitations of claims 17-20 follow/are met when the above system operates.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 1 above, and further in view of Clive et al.

The use of switching and flywheel diodes in this environment for drive circuitry is taught by the Clive et al system.

It would have been obvious to modify the base system of Nishida et al and modify such with the well known circuit elements found in Clive et al, motivation is to increase the reaction time of the overall circuit as taught by Clive et al.

10. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis further considered with either Nishida et al.

Lewis discloses the basic magnetic field ability in this environment wherein the magnetic field generator (head) is depicted, the current sensor and comparator (element 26) and the current driver (element 25) are found. Lewis fails to provide for the additional off time control section.

Such an element is taught by the Nishida et al system – see the discussion with respect to controlling the on off of the drive circuitry appropriately. The limitations of claims 12-15 are shown in both figures 5 and the disclosure with respect to figure 14 accordingly.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 9 above, and further in view of Clive et al.

The use of switching and flywheel diodes in this environment for drive circuitry is taught by the Clive et al system.

It would have been obvious to modify the base system of Nishida et al and modify such with the well known circuit elements found in Clive et al, motivation is to increase the reaction time of the overall circuit as taught by Clive et al.

12. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis further considered with Kumagai et al.

Lewis discloses in the magnetic recording arts, the basic structure of the magnetic field generating device, the current sensor and comparator (element 26) and the appropriate current driver element (25). Lewis lacks the particular disclosure with respect to the off time element.

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The ability of having addition time control circuitry for controlling the switching of a driver is taught by the Kumagai et al disclosure – see the disclosure with respect to figures 1-5 for instance.

It would have been obvious to modify the base system of Lewis with the additional teaching from Kumagai et al, motivation is to reduce turn-on loss as discussed in the abstract of Kumagai et al.

With respect to the limitations of claims 10 and 11 these are interpreted as desired results, i.e., appropriate setting the desired result as a consequence of the input signal condition (L,H) and as such is merely a tweaking of such on/off thresholds. Because Kumagai et al is concerned with reducing turn-on loss, these limitations if not inherently present in the above combined systems would nevertheless be obvious to those of ordinary skill in the art as optimizing the thresholds accordingly.

13. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 9 above, and further in view of Nishida et al.

The ability to correct for bit shift and having the appropriate circuitry required for claim 13 is taught in the Nishida et al document, again see the description with respect to figures 14 and 15.

It would have been obvious to modify the base system as relied upon with respect to claim 9 with the above additional teaching from Nishida et al, motivation is to compensate for bit shifting as well as using established circuitry to provide for the reference (table) and reliance thereon.

14. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 14 above, and further in view of Clive et al.

The use of switching and flywheel diodes in this environment for drive circuitry is taught by the Clive et al system.

It would have been obvious to modify the base system of Nishida et al and modify such with the well known circuit elements found in Clive et al, motivation is to increase the reaction time of the overall circuit as taught by Clive et al.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining art is cited as illustrative of alternative prior art drive circuits for mo heads.

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Hard copies of the application files are now separated from this examining corps; hence the examiner can answer no questions that require a review of the file without sufficient lead-time.

Any inquiries concerning missing papers/references, etc. must be directed to Group 2600 Customer Services at (703) 306-0377.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M Psitos whose telephone number is (703) 308-1598. The examiner can normally be reached on M-Thursday 8 - 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Aristotelis M Psitos
Primary Examiner
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AMP